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WIND ENERGY SCIENCE DISCUSSIONS

Interactive comment on "Do Wind Turbines Pose Roll Hazards to Light Aircraft?" *by* Jessica M. Tomaszewski et al.

Anonymous Referee #3

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This manuscript attempts addressing the issue about flight hazards for airplanes flying in the wake of utility-scale wind turbines. The investigation is carried out through LES simulations and the results are interesting, which might deserve to be disseminated. Please find below some comments.

Comments:

1. P1, L1-4: The first part of the abstract should be more focused and detailed on the motivation, procedure and results. This first four lines sound more appropriate for an introduction; indeed, similar information is reported in Sect. 1.

2. P1, L7: You could add that you deem stable and neutral conditions more critical than convective conditions due to the faster wake recovery. Therefore, you did not

performed simulations under convective conditions.

3. P2, L9 : Why do you only consider roll and not, for instance, pitch moment? Maybe there are safety standards in general aviation that I am not aware of. In that case, please provide related references. I think that a non-symmetric velocity field induced by the wind turbine wake can also affect pitch and yaw of the airplane, which might be a risky situation leading to a premature wing stall. Please comment on this and, eventually, clarify.

4. P2, L11-12: "The rolling moment is the aerodynamic force applied", a moment cannot be a force. Maybe rephrase it saying that the roll moment is the result of the lift distribution over the wing span.

5. Eq. 5 is inconsistent. \beta should be the wing span, not the aspect ratio. I hope this being only a typo and not jeopardizing your analysis. Please cross-check your data analysis as well.

6. P8, L5-7: "a 10-by-10 array of aircraft", this description is not clear. I think It will be better to talk about aircraft paths rather than aircraft arrays. Please try to rephrase it.

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